 US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
	APPLICANT: Kauffman and Rebek	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: June 26, 1997	GROUP: 1656

U. S. PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB- CLASS	FILING DATE
SL	4,237,224	12/02/80	Cohen et al.	435	68	
	4,271,145	06/02/81	Wands et al.	424	85	
	4,293,652	10/06/81	Cohen	435	172	
	4,362,867	12/07/82	Paddock	536	27	
	4,366,246	12/28/82	Riggs	435	68	
	4,394,443	07/19/83	Weissman et al.	435	6	
	4,490,358	12/25/84	Green et al.	424	86	
	4,719,179	01/12/88	Barany	435	127.1	
	Re. 32,833	01/17/89	Greene et al.	424	86	
	4,879,219	11/07/89	Wands et al.	435	7	
	4,959,312	09/25/90	Sirotkin	435	172.3	
	4,968,619	11/06/90	Curtiss, III	435	252.33	
SH	5,223,409	06/29/93	Ladner	435	69.7	
SH	5,270,163	12/14/93	Gold et al. *			
SH	5,545,568	08/13/96	Ellman	436	518	
SH	5,593,853	01/14/97	Chen et al.	435	29	

EXAMINER	<i>S. M.</i>	DATE CONSIDERED	<i>12/00</i>
----------	--------------	-----------------	--------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form 1649 OCT 19 2000 PATENT & TRADEMARK OFFICE US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
	APPLICANT: Kauffman and Rebek	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: June 26, 1997	GROUP: 1656

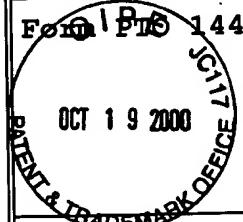
SH		5,639,603	06/17/97	Dower et al.	435	6	
		5,834,195	11/10/98	Benkovic et al.	435	6	
		5,877,030	03/02/99	Rebek, Jr. et al.	436	518	

FOREIGN PATENT DOCUMENTS

EXAM. INITIALS	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB- CLASS	TRANSLATION (YES/NO)
SH	WO 86/05803	10/09/86	PCT			
	WO 90/02809	03/22/90	PCT			
	WO 94/08051	04/14/94	PCT			
	3303173	02/08/84	West Germany			
	3246071	06/14/84	West Germany			
N	3300632	12/07/84	West Germany			

EXAMINER	DATE CONSIDERED
	12/6/00

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

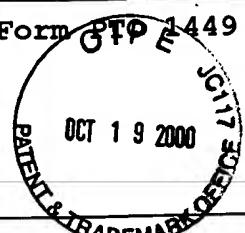
 Form PTO 1449 OCT 19 2000 PATENT & TRADEMARK OFFICE, U.S. DEPARTMENT OF COMMERCE, JCS 11		US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
		APPLICANT: Kauffman and Rebek		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE: June 26, 1997	GROUP: 1656	

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages)

		Arnold, "Tuning the activity of an enzyme for unusual environments: Sequential random mutagenesis of subtilisin E for catalysis in dimethylformamide," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 90:5618-5622 (1993) *
S/H		Bass et al., "Hormone phage: An enrichment method for variant proteins with altered binding properties," <u>PROTEINS Structure, Function Genetics</u> 309-314 (1990).
		Beardsley, "New order: Artificial evolution creates proteins nature missed," <u>Scientific American</u> 263:18 (1990).
		Blackwell and Horgan, "A novel strategy for production of a highly expressed recombinant protein in an active form," <u>FEBS Letters</u> 295:10-12 (1991).
		Botstein and Shortle, "Strategies and applications of in vitro mutagenesis," <u>Science</u> 229:1193 (1985).
		Childs et al., "Ribosome binding site sequences and function," <u>Sequence Specificity in Transcription and Translation</u> , Alan R. Liss, Inc. pp. 341-350 (1985).
		Culi, "Screening for receptor ligands using large libraries of peptides linked to the C terminus of the lac repressor," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 89:1865-1869 (1992).
		Cwirla et al., "Peptides on phage: A vast library of peptides for identifying ligands," <u>Proc. Natl. Acad. Sci.</u> 87:6378 (1990).
✓		Devlin et al., "Random peptide libraries: A source of specific protein binding molecules," <u>Science</u> 249:404 (1990).

EXAMINER	DATE CONSIDERED
	12/00

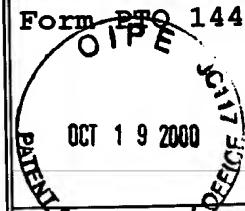
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

 INFORMATION DISCLOSURE STATEMENT BY APPLICANT	US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
	APPLICANT: Kauffman and Rebek		
		FILING DATE: June 26, 1997	GROUP: 1656

<i>SH</i>	Dower and Fodor, "The search for molecular diversity (II): Recombinant and synthetic randomized peptide libraries," <u>Topics in Drug Design</u> , pp. 271-280 (1991).
	Edington, "Shape space: Is biopharmaceutical discovery entering a new evolutionary stage," <u>BIO/TECHNOLOGY</u> 11:285-289 (1993). *
	Fodor et al., "Light-directed, spatially addressable parallel chemical synthesis," <u>Science</u> 251:767-773 (1991). *
	Fox et al., <u>Science</u> 160:547-548 (1968). *
<i>SH</i>	Fox, "Self-ordered polymers and propagative cell-like systems," <u>Die Naturwissenschaften</u> 56:1-9 (1969).
	Fuchs et al., "Antibodies to the surface of escherichia coli:fusion to a peptidoglycan associated lipoprotein," <u>Biotechnology</u> 9:1369-1372 (1991).
	Geysen et al., "Use of peptide synthesis to probe viral antigens for epitopes to a resolution of a single amino acid," <u>Proc. Natl. Acad. Sci.</u> 81:3398 (1984).
	Gogos et al., "Binding site selection analysis of protein-DNA interactions via solid phase sequencing of oligonucleotide mixtures," <u>Nucleic Acids Research</u> 19:1449-1453 (1991).
	Grundstrom, "Oligonucleotide-directed mutagenesis by microscale 'shot gun' gene synthesis," <u>Nucleic Acids Research</u> 13:3305-3316 (1985).
<i>✓</i>	Hermes et al., "Searching sequence space by definably random mutagenesis: Improving the catalytic potency of an enzyme," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 87:696-700 (1990).

EXAMINER	<i>S. H.</i>	DATE CONSIDERED	<i>12/60</i>
----------	--------------	-----------------	--------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

 Form PTO 1449 OCT 19 2000	US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
		APPLICANT: Kauffman and Rebek	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE: June 26, 1997	GROUP: 1656

<i>SH</i>	Houghten, "General method for the rapid solid phase synthesis of large numbers of peptides: Specificity of antigen-antibody interaction at the level of individual amino acids," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 82:5131 (1985).
	Ibanez and Oro, "Possible prebiotic condensation of mononucleotides by cyanamide," <u>Science</u> 173:444-446 (1971).
<i>✓</i>	Irvine et al., "System evolution of ligands by exponential enrichment with integrated optimization by non-linear analysis," <u>Selexion</u> 222:739-761 (1991).
	Jacobs, "Total synthesis of (-) Specionin," <u>J. Am. Chem. Soc.</u> 109:5280-5282 (1987).
<i>SH</i>	Joyce, <u>RNA: Catalysis splicing evolution</u> , Belfert et al., eds. pp. 83-87 (1989).
	Kauffman, "Autocatalytic sets of proteins," <u>J. Theor. Biol.</u> 119:1-24 (1986).
	Keeton, "The origin and early evolution of life," <u>Biological Science</u> W.W. Norton & Company, Inc. pp. 893-897 (1980).
	Knowles, "Tinkering with enzymes: What are we learning?" <u>Science</u> 236:1252-1258 (1987).
	Larn et al., "A new type of synthetic peptide library for identifying ligand-binding activity," <u>Nature</u> 354:82-87 (1991).
	Levin et al., "Hydrolysis and transpeptidation of lysine peptides by trypsin," <u>Biochem. J.</u> 63:308-316 (1956).
<i>✓</i>	Lewin, "The universal construction set," <u>New Scientist</u> 30:30-33 (1990).

EXAMINER	<i>SH</i>	DATE CONSIDERED	<i>12/00</i>
----------	-----------	-----------------	--------------

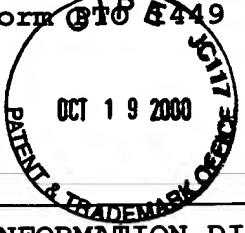
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

	US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
	APPLICANT: Kauffman and Rebek		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: June 26, 1997		GROUP: 1656

<i>SI</i>	Maniatis, "Molecular cloning of double-stranded cDNA," <u>Molecular Cloning</u> 217-228.
<i>SI</i>	Markland et al., "Design, construction and function of a multicopy display vector using fusions to the major coat protein of bacteriophage M13," <u>Gene</u> 06207:13-19 (1991).
	Matteucci and Heyneker, "Targeted random mutagenesis: The use of ambiguously synthesized oligonucleotides to synthesize sequences immediately 5' of an ATG initiation codon," <u>Nucleic Acids Research</u> 11:3113-3121 (1983).
	Mavrothailassitis et al., "Defining target sequences of DNA-binding proteins by random selection and PCR: Determination of the GCN4 binding sequence repertoire," <u>DNA and Cell Biology</u> 9:783-788 (1990).
	Murphy and Baralle, "Directed semisynthetic point mutational analysis of an RNA polymerase III promoter," <u>Nucleic Acids Research</u> 11:7695-7700 (1983).
	Myers et al., "A general method for saturation mutagenesis of cloned DNA fragments," <u>Science</u> 229:242-247 (1985).
	O'Farrell, "High resolution two-dimensional electrophoresis of proteins," <u>J. Biological Chem.</u> 250:4007-4021 (1975).
<i>✓</i>	Ohno, "Birth of a unique enzyme from an alternative reading frame of the preexisted, internally repetitious coding sequence," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 81:2421-2425 (1984).
<i>✓</i>	Oliphant et al., "Cloning of random-sequence oligodeoxynucleotides," <u>Gene</u> 44:177-183 (1986).

EXAMINER	<i>S. R.</i>	DATE CONSIDERED	<i>12/00</i>
----------	--------------	-----------------	--------------

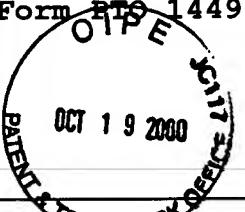
EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

 Form 5449 OCT 19 2000 5449 PATENT & TRADEMARK OFFICE	US Department of Commerce Patent and Trademark Office	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
	APPLICANT: Kauffman and Rebek		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: June 26, 1997	GROUP: 1656	

<i>St</i>	Oliphant and Struhl, "The use of random-sequence oligonucleotides for determining consensus sequences," <u>Methods in Enzymology</u> 155:568-582 (1987).
	Pluckthun and Ge, "The rationality of random screening-efficient methods of selection of peptides and oligonucleotide ligands," <u>Angew Chem. Int. Ed. Engl.</u> 30:296-298 (1991).
	Pluskal et al., "Immobilon PCDF transfer membrane: A new membrane substrate for western blotting of proteins," <u>Bio Techniques</u> 4:272-283 (1986).
	Pollack and Schultz, "Antibody catalysis by transition state stabilization," <u>Cold Spring Harbor Symposia on Quantitative Biology</u> , L11:97-104 (1987).
	Pollack et al., "Selective chemical catalysis by an antibody," <u>Science</u> 234:1570-1573 (1986).
	Roberts et al., "Directed evolution of a protein: Selection of potent neutrophil elastase inhibitors displayed on M13 fusion phage," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 89:2429-2433 (1992).
	Scott and Smith, "Searching for peptide ligands with an epitope library," <u>Science</u> 249:249-386 (1990).
	Shortle et al., "Gap misrepair mutagenesis: Efficient site-directed induction of transition, transversion and frameshift mutations <i>in vitro</i> ," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 79:1588-1592 (1982).
<i>✓</i>	Silver and James, "Enzyme catalyzed condensation reactions which initiate rapid peptic cleavage of substrates. 1. How the structure of an activating peptide determines its efficiency," <u>Biochemistry</u> 20:3177-3182 (1981).

EXAMINER	<i>S. M.</i>	DATE CONSIDERED	<i>12/00</i>
----------	--------------	-----------------	--------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

 Form PTS 1449 US Department of Commerce Patent and Trademark Office OCT 19 2000 PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
	APPLICANT: Kauffman and Rebek	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT	FILING DATE: June 26, 1997	GROUP: 1656

SJ	Silver and James, "Enzyme catalyzed condensation reactions which initiate rapid peptic cleavage of substrates. 2. Proof of mechanism for three examples," <u>Biochemistry</u> 20:3183-3189 (1981).
	Smith, "In vitro mutagenesis," <u>Ann. Rev. Genet.</u> 19:423-462 (1985).
	Stassen et al., "Selection and characterization of randomly produced mutants of gene V protein of bacteriophage M13," <u>EJB</u> 91:1284-1295 (1991).
	Suckling, <u>Bioorganic and Medicinal</u> (1992). *
SJ	Suckling, "Molecular recognition in applied molecular chemistry," <u>Experientia</u> 47:1139-1161 (1991).
	Suckling, "Molecular recognition-A universal molecular science?" <u>Experientia</u> 47:1091-1095 (1991).
	Tabler and Tsagris, "Catalytic antisense RNAs produced by incorporating, ribozyme cassettes into cDNA," <u>Gene</u> 06145:175-183 (1991).
	Tang et al., "In vivo catalysis of a metabolically essential reaction by an antibody," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 88:8784-8786 (1991).
	Taylor, "The rapid generation of oligonucleotide-directed mutations at high frequency using phosphorothioate-modified DNA," <u>Nucleic Acids Research</u> 13:8765-8784 (1985).
	Traboni et al., "A general method to select for M13 clones carrying base pair substitution mutants constructed in vitro," <u>Nucleic Acids Research</u> 11:4229-4239 (1983).
V	Tramontano et al., "Catalytic antibodies," <u>Science</u> 234:1566-1570 (1986).

EXAMINER	DATE CONSIDERED
	12/00

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Form PTO 1449 OCT 19 2000 PATENT & TRADEMARK OFFICE U.S. DEPARTMENT OF COMMERCE		US Department of Commerce Patent and Trademark Office ATTY DOCKET NO: P-SK 4376	SERIAL NO. 08/882,950
APPLICANT: Kauffman and Rebek			
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		FILING DATE: June 26, 1997	GROUP: 1656

<i>SH</i>	Tramontano et al., "Chemical reactivity at an antibody binding site elicited by mechanistic design of a synthetic antigen," <u>Proc. Natl. Acad. Sci. U.S.A.</u> 83:6736-6740 (1986).
	Tramontano et al., "Catalytic antibodies," <u>Cold Spring Harbor Symposia on Quantitative Biology</u> , L11:91-98 (1987).
	Tuerk and Gold, "Systematic evolution of ligands by exponential enrichment: RNA ligands to bacteriophage T4 DNA polymerase," <u>Science</u> 249:505-510 (1990).
	<u>Von Kiedrowski, Agnew Chem.</u> 25:932-935 (1986) *
	<u>Von Kiedrowski, Agnew Chem.</u> 30:423-426 (1991). *
<i>SH</i>	Wells et al., "Cassette mutagenesis: An efficient method for generation of multiple mutations at defined sites," <u>Gene</u> 34:315-323 (1985).
	Wetzel, "Learning from the immune system: Laboratory methods for creating and refining molecular diversity in polypeptides," <u>Protein Engineering</u> 4:371-374 (1991).
	Wong and Wang, "New developments in enzymatic peptide synthesis," <u>Experientia</u> 47: 1123-1129 (1991).
	Zakour and Loeb, "Site-specific mutagenesis by error-directed DNA synthesis," <u>Nature</u> 295:708-710 (1982).

EXAMINER	<i>Bill Forrester</i>	DATE CONSIDERED	<i>12/00</i>
----------	-----------------------	-----------------	--------------

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.